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Family Name						
Given Names						
Student Number						
Teaching Period	Semester 1, 2017					

FINAL EXAMINATION	DURATION
ECO503 – Economic Statistics	
	Reading Time: 10 minutes
	Writing Time: 180 minutes

INSTRUCTIONS TO CANDIDATES

EXAM CONDITIONS

You may begin writing from the commencement of the examination session. The reading time indicated above is provided as a guide only.

This is a RESTRICTED OPEN BOOK examination

Any non-programmable calculator is permitted

One A4 sheet of handwritten double-sided notes permitted

Any hard copy, unannotated English dictionary is permitted

ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED
No additional printed material is permitted	1 x 16 Page Book 1 x Scrap Paper Formula Sheet/s Statistical Table/s

**THIS EXAMINATION IS PRINTED
DOUBLE-SIDED.**

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Part 2 – Written Short- Answer Questions

(15 marks)

Provide full written answers, including all workings of following questions. Questions relate to statistical decision making techniques covered in Weeks 1-7. Each question is worth 5 marks.

Suggested Time Allocation for Part 2: 25 mins

Question 1:

A Government Official from the Department of Population wants to estimate the size of the new settlement in the Galapagos Islands. The manager guesses that each household has, on average, 4 family members. The following distribution gives the number of family members in households.

Number of Phone lines (X)	0	1	2	3
Probability P (X)	0.1	0.3	0.4	0.2

- Is the company manager correct?
- What is the value of variance?
- What is the value of standard deviation?

[5 Marks]

Question 2:

John works as a sales manager for Mazda. He models the total sales of Mazda for next year by using a normal distribution with a mean of AU\$2.5 million and a standard deviation of AU\$300,000.

- What is the probability that Mazda's sales will exceed AU\$3 million?
- What is the probability that Mazda's sales will exceed the break-even level of \$1.8 million in order to cover the fixed costs?
- Determine the sales level that has only a 9% chance of being exceeded next year.

[5 Marks]

Question 3:

Please define the following terms in details:

- Measures of dispersion
- Measures of central tendency

[5 Marks]

Part 3 – Written Long Answer Questions

(15 marks)

Provide full written answer, including all workings of following question. Question relate to statistical decision making techniques covered in Weeks 1-7. The question is worth 15 marks.

Suggested Time Allocation for Part 3: 40 mins

Question 1:

The “*Spice of Himalaya*” restaurant in Darwin attempts to analyse the relationship between advertisement expenditure (AE) and sales. The manager records the weekly advertisement expenditure and sales for a sample of 5 weeks, which are presented below.

AE	3	6	5	9	4
Sales	9	12	13	16	11

- Determine the coefficient of correlation.
- Determine the regression coefficient.
- How do you explain the obtained result in terms of the relationship between advertisement expenditures and sales?

[15 Marks]

Section B

Multiple Choice and Written Answer Questions

Total No of Marks for this section: 50

This section should be answered in the Answer Booklet provided.

Suggested Time Allocation for Section B: 90 mins.

Part 1 - Multiple Choice Questions

(20 Marks)

Answer 20 multiple choice questions covering Sessions 8-12 of the learning materials. Write the letter corresponding to the correct answer to each question in the answer booklet provided. Each question is worth 1 mark.

Suggested Time Allocation for Part 1: 25 mins

1. If an increase in the price of ink leads to a decrease in the demand for pen then pen and ink are considered as:
 - a. normal goods.
 - b. complimentary goods.
 - c. inferior goods.
 - d. substitute goods.

2. As consumer income increases by 15% the demand for Scotch whisky increases by 25%. Scotch whisky is:
 - a. an inferior good.
 - b. a giffen good.
 - c. a normal good.
 - d. none of above.

3. A fish and chips owner increases the price of fish and chips by 15% and finds that demand for fish and chips decreases by 10%, the demand for fish and chips is:
- a. unitary elastic.
 - b. perfectly elastic.
 - c. relatively more elastic.
 - d. relatively more inelastic.
4. Which of the following would cause a leftward shift in the supply curve for steel?
- a. an increase in the demand for steel.
 - b. an increase in the price of iron ore.
 - c. an increase in the wages of steel workers.
 - d. a rise in the price of steel.
5. Market clearing is characterized by:
- a. when the slope of supply and demand curve is same.
 - b. when the number of buyers is equal to the sellers.
 - c. when there is no excess demand and excess supply at the equilibrium price.
 - d. when the elasticity of demand and supply is the same in magnitude.
6. Assume that the market for cars is perfectly competitive. Why is it difficult for a car manufacturer to make more than normal profit?
- a. The fact that car manufacturers are price takers.
 - b. The assumption that there is free entry into the car manufacturing industry.
 - c. Because car manufacturers do not differentiate their products.
 - d. All of the above.

7. A shop should remain closed during the afternoon if the
- a. total cost of staying open is greater than the total revenue due to staying open.
 - b. variable cost of staying open is greater than the total revenue due to staying open.
 - c. total cost of staying open is less than the total revenue due to staying open.
 - d. variable cost of staying open is less than the total revenue due to staying open.
8. A firm in perfect competition market maximises profit when it produces output up to the point where
- a. marginal revenue equals average revenue.
 - b. price equals average variable cost.
 - c. marginal cost equals marginal revenue.
 - d. marginal cost equals total revenue.
9. In the long-run equilibrium in a competitive market, firms operate at
- a. their efficient scale.
 - b. zero economic profit.
 - c. the intersection of marginal cost and marginal revenue.
 - d. All of the above options are correct.
10. A monopolist is able to generate economic profit even in the long run, as
- a. potential competitors sometimes do not notice the profits.
 - b. the monopolist is financially powerful.
 - c. antitrust laws eliminate competitors for a specified number of years.
 - d. there are barriers to entry into the market.

11. Which of the following is not a barrier to entry in a monopoly market?

- a. The government gives a single firm the exclusive right to produce some goods.
- b. A single firm is very large.
- c. The costs of production make a single firm more efficient than a large number of producers.
- d. A single firm owns some of the key resources.

12. In comparison to a perfectly competitive market, a monopoly market will normally generate

- a. higher prices and higher output.
- b. higher prices and lower output.
- c. lower prices and lower output.
- d. lower prices and higher output.

13. Economics is

- a. the study of central planning.
- b. the study of government regulation in economic affairs.
- c. the study of businesses.
- d. the study of how society allocates its scarce resources.

14. The opportunity cost of a good/service is

- a. required amount of money to buy the item.
- b. the number of hours needed to earn money to buy the item.
- c. is always less than the dollar value of the item.
- d. what you give up to get the item.

15. Factors of production are

- a. social, political, cultural and environmental factors that affect production.
- b. different inputs that are used in production process.
- c. different economic analysis that firms make to determine production and profit.
- d. raw materials that are used in production.

16. The law of demand says that, other things remaining the same,

- a. there is an inverse relationship between the price of a good and its quantity demanded.
- b. there is a positive relationship between the price of a good and its quantity demanded.
- c. there is a no relationship between the price of a good and its quantity demanded.
- d. none of the above statements is true

17. If the price of apple is below the equilibrium price.

- a. there is a shortage of apple and the price will rise.
- b. there is a shortage of apple and the price will fall.
- c. there is a surplus of apple and the price will rise.
- d. there is a surplus of apple and the price will fall.

18. A luxuries good is one for which an increase in income causes a/an

- a. decrease in supply.
- b. Increase in supply.
- c. decrease in demand.
- d. increase in demand.

19. Which of the following market comes close to satisfying the assumption of perfectly competitive market?

- a. The stock market.
- b. The market for garments.
- c. The market for soft drinks.
- d. The market for mobile phone sets.

20. The difference between perfect competition and monopoly competition is:

- a. perfect competition has many suppliers while monopoly competition does not.
- b. perfect competition has no barrier to entry, while monopoly competition does.
- c. perfect competition firms have perfectly elastic demand curve, while in monopolistic competition firms have relatively inelastic demand curve.
- d. all of the above.

Part 2 – Short Answer Questions

Answer all the questions provided below.

(15 Marks)

Questions relate to the topics covered in Sessions 8-12. Each question is worth 5 marks.

Suggested Time Allocation for Part 2: 25 mins

Question 1

What is an opportunity cost? Why understanding the concept of opportunity cost is important in economics?

[5 Marks]

Question 2

Explain the concept of economies and diseconomies of scale with the help of a diagram.

[5 Marks]

Question 3

Consider the market for cakes in Darwin. Explain the effect of each of the following with the help of a diagram on equilibrium market price and quantity using a supply and demand model.

- a) A closure of an existing cake shop.
- b) A decrease in the price of ingredients to make cake.

[5 Marks]

Part 3 – Long Answer Question

Answer the following question

(15 Marks)

Question relate to topics covered in Weeks 8-12. The question is worth 15 marks.

Suggested Time Allocation for Part 3: 40 mins

Question 1:

What are the similarities and differences between a competitive and monopoly market structure? Explain your answer with the help of diagrams.

[15 Marks]